Nikon

At the heart of the image

35mm/IX240 & MULTI-FORMAT FILM SCANNERS

SUPER COOLSCAN 9000 ED
SUPER COOLSCAN 5000 ED
COOLSCAN V ED

Three new achievements from the leader in

Dynamic, sophisticated core technologies. A history of excellence in digital imaging. World-renowned optics. These are the attributes that have made Nikon the dominant force in the desktop film scanning market.
Nikon's COOLSCAN lineup features three models, each offering superior optical components, color reproduction and image correction functions, along with incomparable operability. Every model, however, also possesses defining capabilities that, when integrated with Nikon's advanced core technologies, make each COOLSCAN scanner the best in its class.
Whether for home use or for application in small- to large-scale business operations, Nikon COOLSCAN desktop film scanners get the job done — better and faster than any in the field.

COOLSCAN V ED

Welcome to imaging excellence

- High-quality scanning of **35mm (135) format** film
- **4,000 dpi** optical resolution and **14-bit A/D** converter
- Plug-and-play **USB 2.0** interface for rapid transfer of image data
- Fast **38-second** scanning
- Digital ICE⁴ Advanced™

SUPER COOLSCAN 5000 ED

The speed and performance of a leader

- High-quality, high-speed scanning of **35mm (135) format** film
- Ultra-fast **20-second** scanning
- **4,000 dpi** optical resolution and **16-bit A/D** converter
- Plug-and-play **USB 2.0** interface for rapid transfer of image data
- Digital ICE⁴ Advanced™

desktop film scanning

SUPER COOLSCAN 9000 ED

Multi-format scanning at its finest

- High-quality scanning of **multiple film formats** (120/220, 35mm, etc.)
- **4,000 dpi** optical resolution and **16-bit A/D** converter
- High-speed **IEEE 1394** interface
- High-speed scanning (35mm slides: **40 seconds**; 6 x 9: **185 seconds**)
- **Digital ICE⁴ Advanced™** with **Digital ICE Professional™**

The Nikon Difference — exclusive core technologies for unrivaled performance

In the decade since Nikon unveiled the first COOLSCAN film scanner, we have accumulated considerable expertise and applied it to the development of exclusive, cutting-edge technologies. They serve as the foundation for the unparalleled performance offered by each model in the COOLSCAN lineup.

Scanner Nikkor ED lens

The single most important element in the production of high-quality scans is the lens. As you would expect from a world leader in optical technology, Nikon has incorporated lenses of the highest quality in each of our film scanners. Compared to ordinary glass, our ED (Extra-low Dispersion) lens elements are superior in edge-to-edge sharpness, definition and contrast, as well as color registration, saturation and accuracy. No scanner manufacturer can match this level of optical performance.

Low-heat, high-accuracy LED light source

Most competitors' scanners use halogen or fluorescent lamps as light sources, but they require time to warm up and the heat they generate can cause damage to film. Nikon's COOLSCAN series are the only scanners to employ LEDs as their source of light. LEDs are a stable, precise light source requiring neither maintenance nor warmup time, and there's no risk of your film suffering heat-related damage. LED illumination also assures stability in color characteristics, which contributes to faithful reproduction.

Nikon Color Management System

The Nikon Color Management System, or Nikon CMS, provides consistently accurate reproduction of image data on monitors and in printouts. This powerful tool permits the manipulation of colors in the calibrated RGB color spaces before the data are transferred to the host application. Profiles detailing the color characteristics and the output device (monitor or printer) ensure high color-accuracy in almost any operating environment. Each scanner in Nikon's COOLSCAN lineup is compatible with ICC (International Color Consortium) version 4 standards.

Digital ICE⁴ Advanced™

Advanced 4 digital ICE™
Applied Science Fiction

Nikon's world-renowned optics and } innovative lighting help to optimize the effectiveness of Digital ICE⁴ Advanced™ components, making Nikon scanners and the automatic image correction technology an ideal match. The latest editions of Nikon's COOLSCAN film scanners are the first ever to offer Digital ICE™, Digital ROC™, Digital GEM™ and Digital DEE™ all in one package. In addition to providing superb image correction, the power of these technologies also serves to improve the time- and cost-efficiency of your enterprise, regardless of scale.

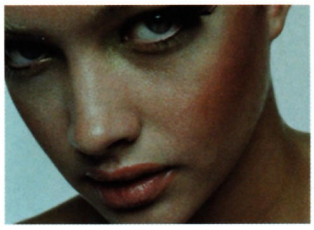
Digital ICE⁴ Advanced™ are technologies developed by Applied Science Fiction.

Comprehensive Scanner Control

Progressive features for high-quality images

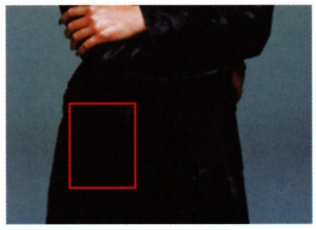
▼ Color negative scanning

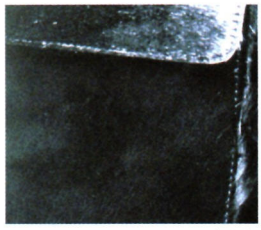
With COOLSCAN



With other film scanners

▼Multi-sample scanning





With Multi-sample scanning (16x)

Without Multi-sample scanning

In order to clearly present the benefits of this function, the image's gamma values have been adjusted.

Improved color negative scanning
Nikon has upgraded its negative film scanning algorithm, significantly boosting image quality. Details that were once hidden in the darker portions of an image are now revealed. Correction of color casts found in color negative film has also been achieved, and monochrome negative film scans now offer smoother, more natural gradation.

Efficient autofocus delivers crisp, accurate images
Scanning curled film strips and film mounts of varying thickness means that the film plane will not always be in the same position relative to the lens. This makes accurate focusing essential in producing superior-quality scans. Nikon's new film scanners feature fast, precise autofocusing, for crisp, clear images quickly and easily. For even higher accuracy, you can select a particular focus point on an image about to be scanned.

Superior scans through Nikon's image control
By using image control features such as Unsharp Mask, Tone Curve and LCH editor during the scanning process, you are virtually guaranteed images of higher quality than would result from post-scan adjustments made using other image control software.

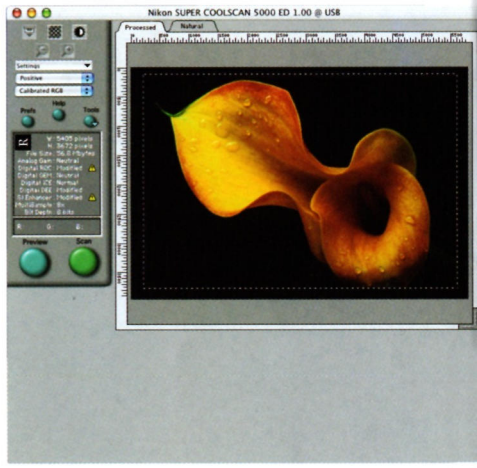
Multi-sample scanning for rich, noise-free images
The multi-sample scanning feature exposes details in the darker portions of photos while eliminating nearly all noise that can appear in those areas after only one scan. By making as many as 16 passes, multi-sample scanning — only available with the SUPER COOLSCAN 9000 ED and 5000 ED — helps ensure faithful reproduction with smoother gradation.

Fast, efficient scanning

Quick operation
Simply turn on the power, and the scanner is ready for operation.
When using the SLIDE MOUNT ADAPTER MA-21, focus is achieved automatically once the scanner recognizes the type of film about to be scanned. You can begin scanning right away, as necessary exposure adjustments are made during image preview.

Batch scanning for increased productivity
You can easily initiate the automatic scanning of multiple frames. For example, using the STRIP FILM ADAPTER SA-21 with the 5000 ED or V ED enables batch scanning of as

Simple, user-friendly operati

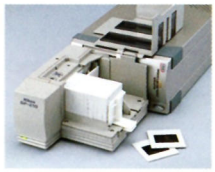


Quality scans made easy
Even first-time scanner users will be astonished at how simple quality film scanning can be. Nikon Scan 4 features an intuitive GUI (Graphical User Interface) that allows you to quickly and easily preview images and even make necessary adjustments before scanning.

Easy digital archive creation

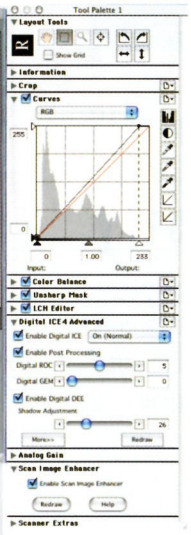
Nikon View
Nikon View is a comprehensive digital imaging software package that enables you to store and check scanned images effortlessly. It features searching and tagging functions that simplify digital archiving. And Nikon View's browser allows you to easily view, edit and print image files that have been saved to your computer's hard disk.

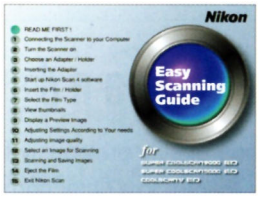
many as 6 frames, or the 35mm STRIP FILM HOLDER FH-835S with the 9000 ED for up to 12 frames — and you can select different settings for each frame.
The 5000 ED can batch-scan up to 40 frames of an uncut roll of film (optional ROLL FILM ADAPTER SA-30), or up to 50 mounted slides (optional SLIDE FEEDER SF-210), giving you time-efficient, high-quality scanning capability.



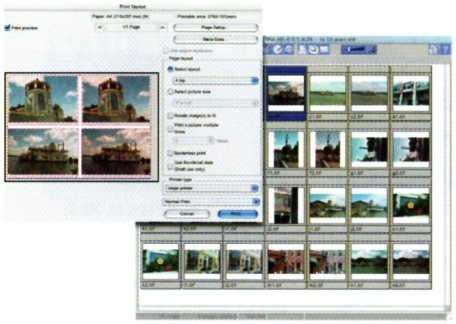
The 5000 ED with SLIDE FEEDER SF-210

on





Easy Scanning Guide
Nikon COOLSCAN and SUPER COOLSCAN film scanners come with an Easy Scanning Guide CD-ROM which features a Flash™ animated explanation of the setup and operation of your new scanner. It also advises you on the quickest way to scan images based on the film type, the desired quality and the application.



Unmatched image restoration functions

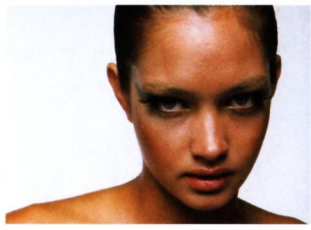
Scan Image Enhancer for one-touch image correction
Without the trouble of complicated control settings, the Scan Image Enhancer automatically adjusts brightness and color saturation to produce images with optimal contrast.

With Scan Image Enhancer

Without Scan Image Enhancer

Stunning image corrections with Digital ICE⁴ Advanced™ technology

▼Digital ICE™



Digital ICE™ ON

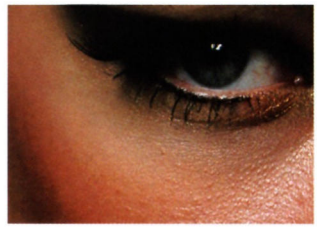
Digital ICE™ OFF

▼Digital ROC™

Digital ROC™ ON

Digital ROC™ OFF

▼Digital GEM™



Digital GEM™ ON

Digital GEM™ OFF

Digital ICE™ (Image Correction & Enhancement)
Digital ICE™ works in tandem with Nikon's special LED illumination to remove surface defects like dust and scratches from a scanned image without altering the underlying composition, details or any other elements of the original image.

Digital ICE Professional™
The 9000 ED features Digital ICE Professional™ which is an advanced version of Digital ICE™ and compatible with Kodachrome film.

Digital ROC™ (Restoration Of Color)
Digital ROC™ restores colors lost through fading of the original film. After calculating the amount of color shift, it then instantly rebuilds and restores the deteriorated color values automatically. The results are faithfully rendered digitized images.

Digital GEM™ (Grain Equalization & Management)
Digital GEM™ reduces the effects of film grain. It reads the grain details in film, extracting all the vital data related to image quality and color. The resulting images are sharp, clear and devoid of grain clumping or graininess.

Digital DEE™ (Dynamic Exposure Extender)
Digital DEE™ makes its debut in Digital ICE⁴ Advanced™. This new feature helps reveal details that are sometimes lost in shadows and highlights. It compensates for the underexposure of backlit subjects or shaded areas as well as the overexposure of brightly lit areas.

With Digital DEE™

Without Digital DEE™

Notes:
- Digital ICE™ is compatible with both color film and color process monochrome film, but is not recommended for use with monochrome film.
- With the 5000 or V ED, when Digital ICE™ is applied to Kodachrome film, blurred images or localized loss of detail may occasionally occur, depending on the film used.
- With the 9000 ED, when using Digital DEE™ to scan medium-format film in a Windows® operating environment, "Crop" palette settings must be adjusted so that the file size is 169MB or less.

COOLSCAN V ED

Superior-Quality Film Scanning, Quickly and Easily

E-mailing images to friends and family, web page design or digital archiving — interested in doing any of these things better and faster? Look no further than the COOLSCAN V ED desktop film scanner. Designed to be easy enough for first-time scanner users to operate smoothly, it provides features and image quality previously found only in more expensive scanners. Factor in a selection of accessories that allows you to scan film of different types, and the result is a cost-effective, user-friendly, high-quality digital imaging tool.

Major Features

■4,000 dpi true optical resolution ■14-bit A/D converter ■New Scanner Nikkor ED lens ■Fast 38-second scanning ■High-quality CCD sensor ■Direct film loading ■New advanced image processing algorithm for color negative film ■Quick AF & Quick Preview ■Scan Image Enhancer ■High-speed USB 2.0 interface ■Digital ICE⁴ Advanced™ (Digital ICE Quad Advanced)

COOLSCAN V ED Accessories

Scan broad range of film types

With the appropriate adapter attached, the COOLSCAN V ED can be used to scan many different types of film, including 35mm color reversal film and negative film strips, color slides and IX240 cartridge film.

STRIP FILM HOLDER FH-3 (optional)
For scanning film strips (one to six frames) with the SLIDE MOUNT ADAPTER MA-21

MEDICAL SLIDE HOLDER FH-G1 (optional)

STRIP FILM ADAPTER SA-21 (supplied)
35mm film; Direct and continuous loading from two- to six-frame; thumbnail display, continuous scanning and batch scanning are possible

SLIDE MOUNT ADAPTER MA-21 (supplied)
Mounted 35mm slides; loads one slide at a time

IX240 FILM ADAPTER IA-20(S) (optional)
Advanced Photo System (IX240) film cartridge; thumbnail display, continuous scanning and batch scanning are possible

High-quality scans the easy way

The COOLSCAN V ED's optical resolution of 4,000 dpi delivers 35mm film scans at a resolution of 21 megapixels (3,654 x 5,646 pixels). Turn 35mm memories into digital images that offer four times the resolution of a 5 effective-megapixel digital camera!

All you need to do is set the film, perform one-touch image preview and click the Scan button, and in about 38 seconds you'll have a high-quality digital image.

Digital ICE™ automatically removes surface defects like dust and scratches from your precious images.

21-megapixel high resolution

Crisp, colorful rendering of treasured moments

In addition to producing faithful, high-quality scanned images, the COOLSCAN V ED can also breathe new life into images that are scratched or have faded over time. Digital ICE⁴ Advanced™ component Digital ICE™ enables the scanner to detect and pick up the color from the original image, while doing away with dusts, scratches and other such imperfections. Digital ROC™ also works to restore the rich, brilliant color of faded images.

Create your own image library.

Why do you need a film scanner? To build a digital photo library? To create large, beautiful prints? With Nikon View, you can do both with surprising ease. Nikon View's searching and tagging functions simplify the creation and maintenance of digital archives, and its browser lets you view images in thumbnail form and enlarge them as well. E-mailing images to family and friends couldn't be simpler. And with advantages like multiple layout options and sizes, and super-high resolution, producing breathtaking prints from your own color printer is both easy and enjoyable.

Specifications

Media
Negatives and positives, in color and monochrome
35mm slides
Slides with mounts 1.0 – 3.2 mm thick, 49 – 50.8 mm wide.
35mm film strips
2 – 6 frames; strips of 1 – 6 frames can be scanned with optional STRIP FILM HOLDER FH-3
Advanced Photo System (IX240) film
Cartridges of 15, 25, and 40 frames can be scanned with optional IX240 FILM ADAPTER IA-20(S)
Preparates (slide glass for microscope)
Prepared slides (26 x 76mm, 0.8 – 1.5mm thick) can be scanned with optional MEDICAL SLIDE HOLDER FH-G1

Aperture/Scan range/Effective aperture
MA-21
25.1 x 36.8mm/3,946 x 5,782 pixels/ Same as slide mount
SA-21
25.1 x 38.0mm/3,946 x 5,959 pixels/ 23.4 x 36.0mm
IA-20(S)
18.6 x 28.4mm/2,916 x 4,453 pixels/ 16.1 x 27.4mm

Scanning system
Fixed film, movable plane single-pass optical scanning system

Light source
R, G, B and Infrared (IR) LEDs

Image sensor
3,964-pixel linear CCD image sensor

Color separation
Performed by RGB LEDs

Optical resolution
Up to 4,000 pixels per inch

A/D conversion
14 bits per color

Density range
4.2

Output
Full color or grayscale at 8 or 16 bits per channel

Focus
Auto and manual; autofocusing point selectable

Interface
USB 2.0

Power requirements
AC 100 – 240V, 50/60Hz

Operating environment
Temperature: 10 – 35°C (50 – 95°F)
Relative humidity: 20 – 60%

Dimensions (W x H x D)
96 x 172 x 315mm
(3.8 x 6.8 x 12.4 in.)

Weight (approx.)
3kg (6.6 lbs)

Orientation
Horizontal or vertical

Scanning time
(time to complete preview or scan when no options selected)
Preview: 14 seconds
Scan*: 38 seconds
*Includes time required to display the scanned image

SUPER COOLSCAN 5000 ED

Speeding Into a New Era in Professional Film Scanning

The new SUPER COOLSCAN 5000 ED is the only choice for professional photographers who demand both quality and speed. Boasting a true optical resolution of 4,000 dpi and 16 bit A/D conversion, the 5000 ED provides amazing image quality, amazingly fast. An unmatched scanning speed of 20 seconds per image brings desktop scanning to an entirely new level. Optional adapters enhance productivity further by enabling the automatic scanning of mounted slides and uncut rolls of film. The features, quality and speed found here make the SUPER COOLSCAN 5000 ED ideal for imaging professionals needing quality scans at the fastest speed possible.

Major Features

■4,000 dpi true optical resolution ■16-bit A/D converter ■New Scanner Nikkor ED lens ■Amazingly fast 20-second scanning ■Newly-developed, high-quality 2-line CCD sensor ■New advanced image processing algorithm for color negative film ■Multi-sample scanning ■Quick AF & Quick Preview ■Scan Image Enhancer ■High-speed USB 2.0 interface ■Digital ICE[4] Advanced™ (Digital ICE Quad Advanced) ■Optional SLIDE FEEDER SF-210 for up to 50 mounted slides ■Optional ROLL FILM ADAPTER SA-30 for up to 40 frames from a film strip

SUPER COOLSCAN 5000 ED Accessories

For efficient, versatile film scans

An impressive array of versatile adapters and holders enables users to scan a variety of film formats:

STRIP FILM HOLDER FH-3 (optional)
For scanning film strips (one to six frames) with the MA-21

MEDICAL SLIDE HOLDER FH-G1 (optional)
For 26 x 76mm preparates (slide glass)

SLIDE MOUNT ADAPTER MA-21 (supplied)
For slide-mounted 35mm (135) film

STRIP FILM ADAPTER SA-21 (supplied)
For 35mm (135) strip film with 2 to 6 frames

IX240 FILM ADAPTER IA-20(S) (optional)
For IX240 (Advanced Photo System™) film cartridge

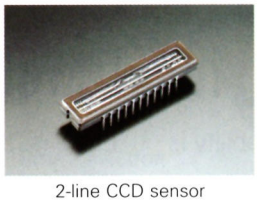
ROLL FILM ADAPTER SA-30 (optional)
For 35mm (135) strip and roll film with 2 to 40 frames

SLIDE FEEDER SF-210 (optional)
For slide-mounted 35mm (135) film – up to 50 slides

The 5000 ED's **Multi-sample scanning** function makes as many as 16 passes, revealing details in shadowy areas while virtually eliminating noise.

Unrivaled scanning speed

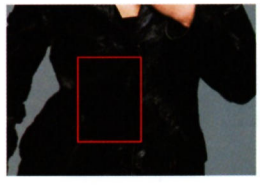
The SUPER COOLSCAN 5000 ED features a new low-noise, 2-line CCD sensor which dramatically reduces scanning time compared to conventional 1-line CCD sensors. You can now scan a frame of 35mm film at super-high resolution in only 20 seconds. In addition, autofocusing speed has also been cut to a mere 4 seconds.



2-line CCD sensor

Stunning Image quality

With a 4,000 dpi optical resolution creating high-resolution, 21-megapixel image data from your 35mm film, you can create large, high-quality prints. The 16-bit A/D converter reads each color's gradation (RGB) in approximately 65,000 steps, so details which are sometimes lost in shadows and highlights will appear in your digital images. A multi-sample scanning feature eliminates random noise seen as pixel artifacts in dark, shadowy areas.



16-bit A/D conversion

14-bit A/D conversion

In order to clearly present the benefits of this function, the image's gamma values have been adjusted.

Accomplish more in less time

The 5000 ED's USB 2.0 interface dramatically increases data transfer speed, while various adapters help maximize productivity. The optional ROLL FILM ADAPTER SA-30 enables scanning of uncut film rolls, while the optional SLIDE FEEDER SF-210 offers continuous scanning of mounted slides. When used together with the batch scanning function, you can leave the 5000 ED unattended while it scans up to 40 images with the SA-30 and up to 50 slides with the SF-210. No other film scanning system offers this level of productivity.

The 5000 ED with ROLL FILM ADAPTER SA-30

Specifications

Media
Negatives and positives, in color and monochrome
35mm slides
Slides with mounts 1.0 – 3.2mm thick, 49 – 50.8mm wide; optional SLIDE FEEDER SF-210 can be used to scan up to 50 slides with mounts 1.5mm thick
35mm film strips
2 – 6 frames (2 – 40 frames with optional ROLL FILM ADAPTER SA-30); strips of 1 – 6 frames can be scanned with optional STRIP FILM HOLDER FH-3
Advanced Photo System (IX240) film
Cartridges of 15, 25, and 40 frames can be scanned with optional IX240 FILM ADAPTER IA-20(S)
Preparates (slide glass for microscope)
Prepared slides (26 x 76mm, 0.8 – 1.5 mm thick) can be scanned with optional MEDICAL SLIDE HOLDER FH-G1

Aperture/Scan range/Effective aperture
MA-21, SF-210
25.1 x 36.8mm/3,946 x 5,782 pixels/ Same as slide mount
SA-21, SA-30
25.1 x 38.0mm/3,946 x 5,959 pixels/ 23.4 x 36.0mm
IA-20(S)
18.6 x 28.4mm/2,916 x 4,453 pixels/ 16.1 x 27.4mm

Scanning system
Fixed film, movable plane single-pass optical scanning system

Light source
R, G, B and Infrared (IR) LEDs

Image sensor
Linear CCD image sensor with 3,964-pixel in two adjacent lines

Color separation
Performed by RGB LEDs

Optical resolution
Up to 4,000 pixels per inch

A/D conversion
16 bits per color

Density range
4.8

Output
Full color or grayscale at 8 or 16 bits per channel

Focus
Auto and manual; autofocusing point selectable

Interface
USB 2.0

Power requirements
AC 100 – 240V, 50/60Hz

Operating environment
Temperature: 10 – 35°C (50 – 95°F)
Relative humidity: 20 – 60%

Dimensions (W x H x D)
96 x 172 x 315mm
(3.8 x 6.8 x 12.4 in.)

Weight (approx.)
3kg (6.6 lbs)

Orientation
Horizontal or vertical (with SF-210: horizontal only; with SA-30: vertical only)

Scanning time
(time to complete preview or scan when no options selected)
Preview: 11 seconds
Scan*: 20 seconds
*Includes time required to display the scanned image

SUPER COOLSCAN 9000 ED

A Breakthrough in Professional Multi-Format Film Scanning

The SUPER COOLSCAN 9000 ED's multi-format capability is specifically designed for imaging professionals. Scanning is possible for 120/220, 35mm, 6 x 7, 6 x 9, 16mm, electron microscope and other film formats. The 9000 ED's large-diameter Scanner Nikkor ED lens, 3-line CCD image sensor and LED light source with rod dispersion have all been improved for enhanced image quality with faster scanning speeds. These premium features give you the leading edge in professional desktop imaging.

Major Features

■ Multiple film formats (120/220, 35mm, etc.) ■ 4,000 dpi true optical resolution ■ 16-bit A/D converter ■ Large-diameter new Scanner Nikkor ED lens ■ Improved rod dispersion LED illumination ■ High-speed scanning (35mm slide film: 40 seconds; 6 x 9: 185 seconds) ■ Newly-developed, high-quality 3-line CCD sensor ■ New advanced image processing algorithm for color negative film ■ Multi-sample scanning ■ Quick AF & Quick Preview ■ High-speed IEEE 1394 interface ■ Scan Image Enhancer ■ Digital ICE⁴ Advanced™ (Digital ICE Quad advanced) with Digital ICE Professional™

SUPER COOLSCAN 9000 ED Accessories

Film holder variety covers multiple formats

An impressive array of versatile film holders enables users to scan a variety of film formats:

List of holders

35mm STRIP FILM HOLDER FH-835S (supplied)
Strip type
•35mm strip film with 1 to 12 frames, up to 2 strips

35mm MOUNTED FILM HOLDER FH-835M (supplied)
Mount size
Width: 49–50.8mm (1.9–2.0 in.)
Thickness: 1.0–3.2mm (0.04–0.13 in.)
•Up to 5 slides

120/220 STRIP FILM HOLDER FH-869S (supplied)
Strip type
•6 x 4.5 strip film with 1 to 4 frames
•6 x 6 strip film with 1 to 3 frames
•6 x 7/8/9 strip film with 1 to 2 frames
•59 x 82mm electron microscope film

120/220 MOUNTED FILM HOLDER FH-869M (optional)
Film type
•6 x 4.5/6 film with 1 frame
•6 x 7/8/9 film with 1 frame

120/220 STRIP FILM HOLDER WITH GLASS FH-869G (optional)
Strip type
•6 x 4.5 strip film with 1 to 4 frames
•6 x 6 strip film with 1 to 3 frames
•6 x 7/8/9 strip film with 1 to 2 frames
•59 x 82mm electron microscope film

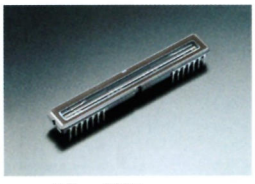
120/220 FILM ROTATED HOLDER WITH GLASS FH-869GR (optional)
Strip type
•6 x 4.5 strip film
•6 x 6 strip film
•6 x 7/8/9 strip film
•59 x 82mm electron microscope film
•24 x 58mm panoramic film
•24 x 65mm panoramic film

16mm FILM HOLDER FH-816 (optional)
Film type
•16mm film up to 3 strips

MEDICAL SLIDE HOLDER FH-8G1 (optional)
Slide glass type
•26 x 76mm preparates (slide glass) up to 3 frames
•Max. total thickness: 2mm

Nikon Scan 4's comprehensive image control options afford you freedom in image quality control and enhancement, helping to ensure high-quality professional printing.

Pro quality and multi-format versatility

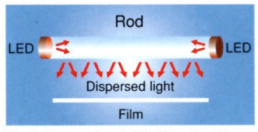


3-line CCD sensor

The SUPER COOLSCAN 9000 ED scans a variety of film formats, including medium format (120/220), 35mm (135) format, 16mm, electron microscope and preparates (glass slides for a microscope). To reproduce the high definition of medium-format films, the 9000 ED boasts special optics and a new 3-line CCD image sensor. The Scanner Nikkor ED lens has a larger, specially designed diameter which ensures high-resolution reading of medium-format film while delivering unparalleled optical purity to the CCD.

Crisp, vivid, color-true images

With 4,000 dpi optical resolution and 16-bit A/D conversion, astoundingly vivid images are produced. For example, using 8,946 x 8,946-pixel image data in a 6 x 6 format, over 65,000 steps per color (RGB) are at the 9000 ED's disposal. The LED light source is also specially designed for multi-format scanning, with LEDs for each color (RGB plus IR) using dispersed rod illumination (see illustration). The result is a smoother reproduction of picture grain and more accurate reading and rendering of every color.



Rod dispersion LED illumination

Expert image control features

The SUPER COOLSCAN 9000 ED with Nikon Scan 4 provides you with comprehensive digital darkroom capability. Enhanced LED illumination has enabled the incorporation of Digital ICE Professional™, which is effective with Kodachrome film. With only a few pre-scan adjustments, you can achieve high-quality images that remain faithful to the original color composition — something other image-control applications struggle with. Nikon's Color Management System (CMS) also ensures that every shade and hue can be accurately reproduced in nearly all operating environments.

Specifications

Media
Negatives and positives, in color and monochrome
35mm film
1 – 2 strips of 1 – 6 frames; up to 3 frames of 24 x 48mm or 24 x 65mm panorama film can be scanned with optional 120/220 FILM ROTATING HOLDER WITH GLASS FH-869GR
35mm slides
1 – 5 slides with mounts 1.0 – 3.2mm thick, 49 – 50.8mm wide
Medium-format film
1 – 4 frames (6 x 4.5), 1–3 frames (6 x 6), or 1 – 2 frames (6 x 7, 6 x 8, or 6 x 9)
Medium-format slides
Slides with mounts 1.0 – 3.2mm thick can be scanned with optional 120/220 MOUNTED FILM HOLDER FH-869M
16mm film
1 – 3 strips of 1 – 20 frames can be scanned with optional 16mm FILM HOLDER FH-816
Preparates (slide glass for microscope)
1 – 3 prepared slides (26 x 76mm, 0.8 – 2mm thick) can be scanned with optional MEDICAL SLIDE HOLDER FH-8G1

Aperture/scan range (pixels)
FH-835S
25.4 x 37.5mm/4,000 x 5,904
FH-835M
37.5 x 25.6mm/5,905 x 4,032
FH-869S, FH-869G
6 x 4.5: 56.9 x 42.5mm/8,964 x 6,696
6 x 6: 56.9 x 56.9mm/8,964 x 8,964
6 x 7:56.9 x 70.0mm/8,964 x 11,016
6 x 8: 56.9 x 77.5mm/8,964 x 12,204
6 x 9: 56.9 x 83.7mm/8,964 x 13,176
5.9 x 8.2: 56.9 x 83.7/8,964 x 13,176
FH-816
15.0 x 21.48mm/2,362 x 3,384
FH-8G1
46.02 x 24.0mm/7,248x 3,780

Scanning system
Fixed optical, movable media, parallel single-pass scanning system
Light source
R, G, B and Infrared (IR) LEDs; light source with rod disperser and light output slot
Image sensor
10,000-pixel, three-line monochrome linear CCD image sensor
Color separation
Performed by RGB LEDs
Optical resolution
Up to 4,000 pixels per inch
A/D conversion
16 bits per color
Density range
4.8
Output
Full color or greyscale at 8 or 16 bits per channel
Focus
Auto and manual; autofocusing point selectable
Interface
IEEE 1394
Power requirements
AC 100–240 V, 50/60 Hz
Operating environment
Temperature: 10 – 35°C (50 – 95°F)
Relative humidity: 20 – 60%
Dimensions (W x H x D)
249 x 498.5 x 202 mm
(9.8 x 19.6 x 8.0 in.)
Weight (approx.)
9kg (19.8 lbs)
Scanning time
(time to complete preview or scan when no options selected)
35 slide (with FH-835M)
Preview: 13 seconds
Scan*: 40 seconds
120/220 slide (with FH-869S)
Preview: 38 seconds
Scan*: 185 seconds
*Includes time required to display the scanned image

Nikon Scan 4 System Requirements

Windows

CPU	Pentium® 300MHz or faster
OS	Windows® 98SE, Windows® Me, Windows® 2000 Professional, Windows® XP Home Edition, Windows® XP Professional pre-installed model
RAM*	128MB or more (512MB or more recommended)
Hard disk**	40MB required for installation (200MB recommended), with an additional 200MB of free disk space available while Nikon Scan is running
Display	800 x 600 with 16-bit color (full color recommended)
Interface	USB***: Built-in USB 1.1 ports, USB 2.0 IEEE 1394: OHCI-compliant IEEE 1394 interface required
Others	CD-ROM drive required for installation

Macintosh

CPU	Power PC G3 or later (G4 or later recommended)
OS	Mac® OS 9 (9.1 or later), Mac® OS X (10.1.5 or later)
RAM*	Mac® OS 9: 64MB or more (256MB or more recommended) Mac® OS X: 128MB or more (512MB or more recommended)
Hard disk**	70MB required for installation (200MB recommended), with an additional 200MB (Mac® OS 9) or 550MB (Mac® OS X) of free disk space available while Nikon Scan is running
Display	800 x 600 with 16-bit color (full color recommended)
Interface	USB***: Built-in USB 1.1 ports, USB 2.0 Firewire: Only built-in Firewire ports supported
Others	CD-ROM drive required for installation

Nikon View System Requirements

Windows

CPU	Pentium® 300MHz or faster
OS	Windows® 98SE, Windows® Me, Windows® 2000 Professional, Windows® XP Home Edition, Windows® XP Professional pre-installed model
RAM	64MB or more recommended
Hard disk	60MB required for installation
Display	800 x 600 with 16-bit color (full color recommended)
Others	CD-ROM drive required for installation

Macintosh

Models	iMac™, iMac™ DV, Power Macintosh® G3 (Blue & White), Power Mac™ G4 or later, iBook™, PowerBook® G3 or later (only built-in USB ports supported)
OS	Mac® OS 9.0 – 9.2 (only built-in USB ports are supported), Mac® OS X (10.1.3 or later)
RAM	64MB or more recommended
Hard disk	60MB required for installation
Display	800 x 600 with 16-bit colors (full color recommended)
Others	CD-ROM drive required for installation

* More memory may be required depending on film type, scan size, resolution, bit depth, the number of scans performed in each session, the film holder or adapter used, and whether Digital ROC™ or Digital GEM™ are used. A system with more than the minimum amount of memory is recommended.

** More free disk space may be required depending on the film type and number of frames. Nikon recommends having as much free disk space as possible when running Nikon Scan.

*** Depending on the type of interface installed, USB will operate at high speed (USB 2.0 only; maximum transfer rate 480 Mbps) or full speed (USB 1.1/USB 2.0; maximum transfer rate 12 Mbps). Computers running Windows® XP and Windows® 2000 Professional with a USB 2.0 interface support high-speed USB. For more information, consult the manufacturer. Users of Windows® XP, Windows® 2000 Professional or Mac® OS X whose computer is not equipped with USB 2.0 can install a RATOC PCIU3U USB 2.0 interface board (for more information, visit Ratoc Systems English-language web site at http://www.ratocsystems.com/english/index.html).

Note:
Scanning times and other performance-related statistics are based on Nikon internal testing results.

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Digital ICE⁴ Advanced™ are technologies developed by Applied Science Fiction.
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Application period | Sept. 1 - Nov. 30, 2004
http://nikonimaging.com/global/activity/npci

WARNING TO ENSURE CORRECT USAGE, READ MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT. SOME DOCUMENTATION IS SUPPLIED ON CD-ROM ONLY.

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